DEPARTMENT OF THE NAVY INSTALLATION RESTORATION PROGRAM NAVAL AIR STATION, BRUNSWICK, MAINE

PROPOSED REMEDIAL ACTION PLAN FOR SITE 9

Introduction

The Department of the Navy is releasing this Proposed **Remedial Action**[1] Plan (Proposed Plan) to address the **groundwater**, surface water, soil, and sediment contamination located at the Naval Air Station (NAS) Brunswick, Site 9 (Neptune Drive Disposal Site), in the City of Brunswick, Maine (Figure 1). In accordance with Section 117(a) of the **Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**, the law known as Superfund, the Proposed Plan presents the preferred remedial alternative for Site 9 and requests the Public's involvement in the selection of a final remedy.

This site was investigated as part of the base's Installation Restoration Program, which was conducted to identify and clean up sites created by past operations that do not meet today's environmental standards. The Navy is the "lead agency" for this project. The U.S. Environmental Protection Agency (EPA) Region 1 and the State of Maine Department of Environmental Protection (MEDEP) provide regulatory oversight of Navy environmental activities. The Public has also participated and is invited to attend Restoration Advisory Board meetings, which are held on a quarterly basis. This Proposed Plan is intended to accomplish the following objectives:

- Update information contained in the Interim **Record of Decision** issued for Site 9 in 1994 with the results of subsequent investigations.
- Explain the preferred remedial alternative the Navy has proposed for Site 9.
- Describe the other remedial alternatives assessed for Site 9.
- Define how "You," the Public, can participate in the process.
- Explain how you can obtain additional information.

The Proposed Plan recommends **natural attenuation** with long-term monitoring and implementation of institutional controls to address any threats posed by groundwater and soil at Site 9 that could impact Public health and the environment.

THE CLEANUP PROPOSAL

After careful study of Site 9, the Navy proposes the following plan:

Inactive Landfill

- ✔ Establish institutional controls to restrict disturbance of the landfill contents
- ✔ Continue long-term monitoring to verify landfill contents are not impacting groundwater
- ✔ Perform 5-year reviews

Vinyl Chloride Groundwater Contamination

- ✔ Continue natural attenuation
- ✔ Establish institutional controls such as land use restrictions for groundwater
- ✔ Continue Long-Term Monitoring with 5-year reviews

Surface Water and Sediment

- ✔ Continue long-term monitoring to verify vinyl chloride is not significantly impacting these media.

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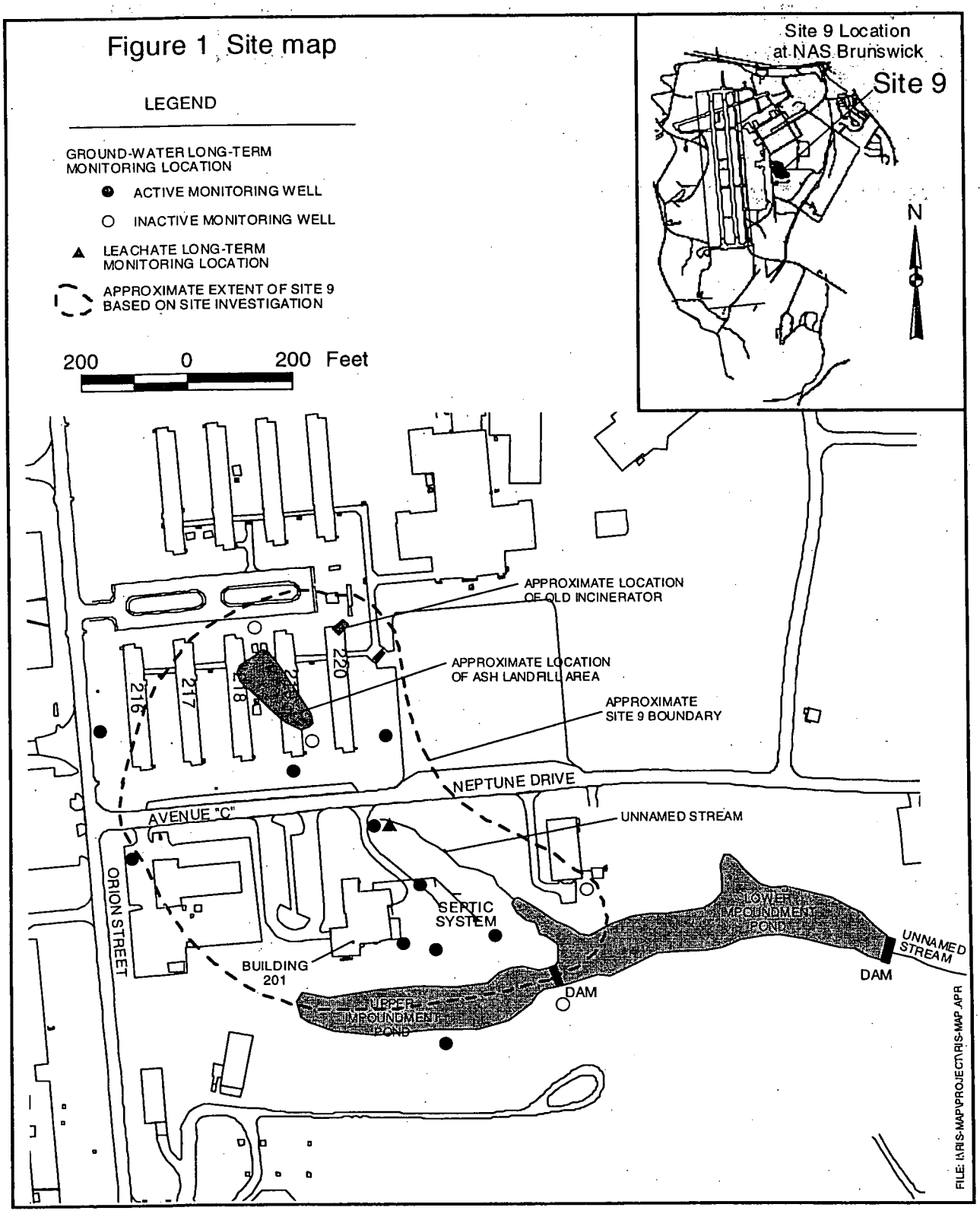
1. Text first shown in **boldface** is defined in the Glossary.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The Proposed Remedial Action

The Navy's recommendation for natural attenuation with long-term monitoring and institutional controls is based upon the following:

- A **remedial investigation** was completed to define the key site characteristics and contaminants of concern.
- As the landfill is currently covered and located under barracks, institutional controls would restrict disturbance of the landfill contents.
- The primary groundwater contaminant of concern, vinyl chloride, is present in the groundwater at Site 9, but not in the soil.
  - Extensive investigations have not identified the source responsible for vinyl chloride in Site 9 groundwater.
- Long-term monitoring of Site 9 groundwater, stream sediment, surface water, and groundwater seep indicates **volatile organic compound** concentrations, including vinyl chloride, are generally stable or decreasing. However, vinyl chloride is above the **Federal Maximum Contaminant Levels and State Maximum Exposure Guidelines** in groundwater at 3-4 monitoring locations. The concentrations are detected up to 20 parts per billion.
- There has been no evidence of movement of contaminants of concern from Site 9 above the Federal Maximum Contaminant Levels and State Maximum Exposure Guidelines.
- Site 9 is located on an active military base whose water is supplied by the Brunswick Water District. Groundwater in the area is not used for drinking or residential use.
- Surface water concentrations of vinyl chloride are below ambient water quality criteria.
- Contaminants were detected in sediment from the unnamed stream at concentrations that are not toxic to aquatic organisms.

How to Obtain More Information

The Navy will hold a Public Informational Meeting on *15 July 1999* at 7:00 p.m., to be held in the Brunswick Municipal Meeting Room, 44 McKeen Street, in order to describe the proposed alternative as well as the other alternatives which were evaluated. The Public is encouraged to attend this meeting in order to hear the presentations and to ask questions.

The requirements defined in the Site 9 Interim Record of Decision, including use of natural attenuation with long-term monitoring, have been protective of human health and the environment. The interim remedy in place at Site 9 and the preferred final remedial alternative presented in this Proposed Plan for groundwater are essentially the same. This is because the Site 9 Interim Record of Decision focused on groundwater after field investigations failed to identify any distinct source areas at the site, and additional investigations required by the Interim Record of Decision also failed to identify any distinct source areas at the site.

The official, 30-day Public comment period will be from 13 July to 13 August 1999. Upon timely request, the Navy will extend the comment period by a minimum of 30 additional days. You do not have to be a technical expert to comment—the Navy wants to hear your comments before making a final decision.

During the comment period, the Public is invited to review the documents and correspondence that support the Proposed Plan. These documents have been compiled into an **Administrative Record.** The Administrative Record, including relevant documents, is available for your review at the Curtis Memorial Library located in Brunswick.

Public comments are an important part of the cleanup process for Site 9. Upon review and consideration of public comments, the Navy and EPA will issue a final remedy choice in a signed Record of Decision document with expected concurrence by MEDEP. Therefore, the Navy is encouraging the Public to provide comments on this Proposed Plan.

There are two ways to offer your formal comments on the Proposed Plan:

1. Offer oral comments during the Public Hearing to be held after the Public Informational Meeting on *15 July 1999*, at 7:00 p.m., in the Brunswick Municipal Meeting Room, 44 McKeen Street. Comments made at the hearing will be transcribed, and a copy of the transcript will be added to the site Record of Decision and Administrative Record.

2. Send written comments by the end of the Public comment period (postmarked no later than *13 August 1999*) to the following address:

   Mr. Emil Klawitter
   Remedial Project Manager (Code 1821 EK)
   Northern Division, Naval Facilities
   Engineering Command
   10 Industrial Highway, Mail Stop #82
   Lester, PA 19113-2090
   Fax: (610) 595-0555

Upon review and consideration of Public comments, the Navy and EPA will issue a final remedy choice in a signed Record of Decision document with expected concurrence by MEDEP. The Record of Decision will contain a Responsiveness Summary in which the Navy's responses to comments received during the Public comment period will be presented.

Site History

NAS Brunswick, located in Brunswick, Maine, is an active base owned and operated by the Federal government through the Department of the Navy. In 1987, EPA placed NAS Brunswick on the **National Priorities List**. NAS Brunswick is located south of the Androscoggin River between Brunswick and Bath, Maine, south of Route 1 and between Routes 24 and 123.

The primary mission of NAS Brunswick is flight operations related to anti-submarine warfare.

Site 9 was identified in the Initial Assessment Study (Roy F. Weston 1983) and was later included in the Pollution Abatement Confirmation Study (E.C. Jordan 1985). Based on information gathered during those tasks, Site 9 contains three areas of potential concern:

1. The former location of an incinerator in the northeast corner of Building 220, and an inactive ash landfill area in the current location of Buildings 218 and 219 (military barracks north of Neptune Drive)

2. A reported disposal area behind Building 201 (the dining facility south of Neptune Drive)

3. The two unnamed streams bordering the recreational area behind Building 201. One stream has been flooded and is referenced as the upper impoundment pond.

These areas are described in the following paragraphs, and the layout of Site 9 is shown on Figure 1.

Former Incinerator and Inactive Ash Landfill

The inactive ash landfill is located under barracks buildings north of Neptune Drive. The incinerator location has been identified from maps of the area. There is no precise information concerning the types of wastes handled or disposed of in these areas. The incinerator was apparently operated during a period between 1943 until 1946. Wastes disposed of at Site 9, presumably at the location of the inactive ash landfill, reportedly included solvents that were burned on the ground, paint sludges, and possible wastes from the Metal Shop. Current land use at the former incinerator and inactive ash landfill is for military residences.

Building 201

Historical information and aerial photographs indicate an area southeast of Building 201 was possibly used as a solvent burning or dumping area, although no potential source has been identified. This site has more recently been used as a picnic area. A septic system associated with Building 201 was suspected to be a potential source of contamination.

Unnamed Streams

Two unnamed streams border the area around Building 201: one to the north and one to the south. These streams drain runoff from the central portion of the base, including the runways, parking lots, and paved roads. Two retention ponds were constructed during 1997, which have flooded the streams adjacent to Site 9. Groundwater seeps have been observed flowing into the northern unnamed stream.

Long-Term Monitoring Plan

At Site 9, the Navy is performing long-term monitoring and maintenance of the monitoring network, and instituting measures to prevent human contact with groundwater as part of the long-term remedial action required by the Interim Record of Decision for the Groundwater Operable Unit at Site 9 dated September 1994 (ABB-ES 1994a). A Long-Term Monitoring Program was established pursuant to the Interim Groundwater Record of Decision (ABB-ES 1995).

Future Events

As part of the Navy's overall remediation strategy at NAS Brunswick, the final Record of Decision for Site 9 will be prepared. To date, four final Records of Decision have been signed by EPA with MEDEP concurrence for other sites at NAS Brunswick, and the final Site 9 Record of Decision is scheduled to be completed during 1999.

Summary of Investigations

Remedial Investigation (E.C. Jordan 1990)

The Navy completed a remedial investigation at Site 9. This investigation characterized the site geology, hydrology, and inorganic and organic contaminants of concern in the soil, stream sediment, groundwater, and surface water, and assessed the extent and level of the soil contamination.

In the remedial investigation, the inactive landfill area was not considered to be of concern as it had been covered with soil and barracks erected on top. Therefore, there was no exposure to the landfill contents.

The remedial investigation focused on the area adjacent to Building 201 where a solvent burning or disposal area was suspected. In the remedial investigation, volatile organic compounds were detected in groundwater. Test pits and borings could not find the source of the groundwater contamination.

Supplemental Remedial Investigation (E.C. Jordan 1991)

Since the initial remedial investigation did not find the source of groundwater contamination, a supplemental remedial investigation (E.C. Jordan 1991) was performed at Site 9. These investigations were focused adjacent to Building 201 where the source of groundwater contamination was suspected. Test pits were excavated, the soil sampled, and a groundwater screening survey was performed.

The test pits and soil samples did not find the source area, and the groundwater survey demonstrated a localized region of volatile organic compound groundwater contamination around the Building 201 area. A possible source area was identified as an old septic system behind Building 201 which operated for 20 years before installation of the base sewer system.

Technical Memorandum (ABB-ES 1994b)

Field investigations were performed in 1993 to further characterize the inactive landfill and provide information to support possible remedial action and continued groundwater monitoring. These efforts were summarized in a Technical Memorandum (ABB-ES 1994b). The field effort characterized the extent and chemistry of the inactive landfill and assessed the likelihood that the septic system located east of Building 201 could be the primary source of vinyl chloride in groundwater.

These activities determined the following:

- Volatile organics, including vinyl chloride, were present in groundwater at concentrations exceeding Federal Maximum Contaminant Levels and State Maximum Exposure Guidelines.
- It was determined that the septic system behind Building 201 was no longer an active source of vinyl chloride in the groundwater at Site 9 but could have been an historical source.
- The inactive ash landfill was identified and characterized. **Polycyclic aromatic hydrocarbons** were present in the ash but not present in groundwater downgradient from this location.
- Elevated concentrations of metals above Federal Maximum Contaminant Level and State Maximum Exposure Guidelines, including aluminum, iron, and manganese, were present in groundwater downgradient of the inactive ash landfill. These contaminants may be due to disposal activities in this area.
- Metals and polycyclic aromatic hydrocarbons were detected in groundwater seep and sediment from the unnamed streams. The presence of these contaminants is likely attributable to runoff from non-point sources such as roadways and parking lots.
- Groundwater flow at Site 9 is to the south and southeast.

Interim Record of Decision (ABB-ES 1994a)

The Interim Record of Decision was developed by the Navy and approved by EPA and MEDEP in September 1994 to require the Navy to monitor the groundwater contamination at Site 9 while conducting additional source investigations. The selected interim remedial action included the following: groundwater remediation through natural attenuation to contaminant concentrations below Federal Maximum Contaminant Levels and State Maximum Exposure Guidelines, institutional controls to prevent human contact with the groundwater, development of a Long-Term Monitoring Plan, and 5-year site reviews.

The Interim Record of Decision stated that the interim remedy did not address the source of the groundwater contamination, and that the results of the Navy's additional source investigations were to be used in developing a final Record of Decision for Site 9.

Sediment Investigation (USFWS 1997)

The U.S. Fish and Wildlife Service (USFWS) performed a study to assess the potential risk for sediment in the unnamed streams to affect aquatic organisms. Field work was performed in 1995, and in their published study, USFWS determined the concentrations of polycyclic aromatic hydrocarbons and other environmental contaminants in the sediment were not toxic to the two test organisms. Also, compared to remedial investigation results, elevated polycyclic aromatic hydrocarbons concentrations were not found during this study.

Additional Source Investigation (ABB-ES 1997)

In accordance with the Interim Record of Decision, the Navy conducted an Additional Source Investigation to find an ongoing source of the volatile organic compound contamination in the Site 9 groundwater. This Additional Source Investigation was conducted at Site 9 in 1995-1996. As a result of this investigation, the Navy reached the following conclusions:

- No specific source of vinyl chloride in groundwater was identified.
- A fuel spill may have once occurred although concentrations were below cleanup goals for soil.

- Groundwater sampling indicated that volatile organic compound concentrations had stabilized over time and may be attributed to the landfill area or the septic system located behind Building 201.
- Continuation of the Long-Term Monitoring Program was recommended to clearly show if contaminant concentrations are declining with time, and to determine the long-term effects of natural attenuation.

Long-Term Monitoring Plan (ABB-ES 1995)

A Long-Term Monitoring Plan was developed in 1995 (ABB-ES 1995) as required by the Interim Record of Decision to address the groundwater contamination at Site 9. The purpose of the Long-Term Monitoring Plan was to:

- Characterize the groundwater and surface water quality onsite and downgradient of Site 9.
- Identify impact associated with past disposal activities.
- Better establish the presence/absence and concentrations of contaminants which were sporadically identified during previous sampling events.

As of April 1999, a total of 14 sampling events have been accomplished at Site 9 with the primary emphasis placed on groundwater monitoring of vinyl chloride concentrations. These results indicate a general reduction or stabilization of the vinyl chloride concentrations at several monitoring locations. However, 3-4 monitoring locations continue to detect vinyl chloride above the Federal Maximum Contaminant Levels and State Maximum Exposure Guidelines. With the exception of manganese, inorganic sample results are at or below regulatory criteria. The elevated manganese concentrations are believed to be attributable to natural site conditions. The Long-Term Monitoring Program will continue to be evaluated and revised based on the results of the analytical samples.

The unnamed streams in the Site 9 area receive stormwater runoff from most of the Air Station's built-up area. Therefore, the polycyclic aromatic hydrocarbon compounds reported in stream sediment and surface water are believed to be from the runoff from non-point sources on base such as vehicles, roadways, and aircraft.

The revised Long-Term Monitoring Plan will be reviewed and approved by EPA and MEDEP in consultation with the Restoration Advisory Board. This Plan will have the following goals:

- Evaluate whether the inactive landfill contents are impacting groundwater.
- Monitor the volatile organic compound contamination to evaluate the effectiveness of natural attenuation and determine trends with time.
- Monitor impact to the environment due to Site 9.
- Monitor changes to the plume boundary and potential migration pathways.
- Monitor the effectiveness of the remedial action for the protection of human health and the environment.

Risk Evaluation

A **Baseline Risk Assessment** was completed for Site 9 to estimate potential risks to human health and the environment posed by potential exposure to groundwater, surface water, sediment, leachate, and soil contaminants (E.C. Jordan 1990). The baseline risk assessment did not address the current or potential risks from exposure to the contents of the inactive ash landfill on the grounds that human exposure to the landfill contents was unlikely. Since the Navy stopped using the landfill, the landfill area has been graded and covered with soil, and barracks used for military residences have been constructed that cover the area. The risk assessment also did not address potential ecological risks from the inactive ash landfill.

The risk assessment indicated an elevated risk is present based on ingestion or contact with groundwater.

It should be noted that groundwater at Site 9 is not currently used as a source of drinking water as the NAS Brunswick water supply comes from the municipal system. Additionally, there is no evidence of plume migration offsite or downgradient of the site above the Federal Maximum Contaminant Levels and State Maximum Exposure Guidelines. Laboratory results of the Long-Term Monitoring Plan have detected vinyl chloride in the surface water of the north branch of the unnamed stream at 1.0 $\mu g/L$ or less, and vinyl chloride has not been detected in the south branch of the unnamed stream. Additionally, the vinyl chloride concentrations in Site 9 groundwater have been decreasing at some locations, however, 3-4 monitoring locations have exceeded the State drinking water standard of 0.15 parts per billion and the Federal drinking water standard of 2.0 parts per billion.

Also, a human health and ecological risk assessment was accomplished in the Building 201 area. For future residents, exposure to the surface soil was within the EPA acceptable range. Because polycyclic aromatic hydrocarbons are present in sediment near Building 201 the potential impact to ecological receptors was estimated. However, there was little evidence that site related compounds are migrating into downstream areas which would present a risk to ecological receptors. This contamination was believed to be a result from surface water runoff from the northern urbanized area of the base.

Actual or threatened releases of hazardous substances from this site, if not addressed by the proposed remedy or one of the other active measures considered, may present a current or potential threat to Public health, welfare, or the environment.

Summary of Remedial Alternatives

The primary objectives of the proposed remedies for Site 9 are two-fold:

1. Prevent disturbance of the inactive landfill contents.
2. Prevent human exposure to the contaminated groundwater while reducing contaminant of concern concentrations at the site.

To meet these objectives, the Navy has developed the following three remedial alternatives, which are summarized in Table 1.

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TABLE 1 COMPARISON OF THE PROPOSED REMEDIAL ALTERNATIVES

Remedial Alternatives	Components	Comment
1. No Action	• None	• Provides limited protection of human health and the environment • Does not comply with regulatory requirements Cost: $0 (20- year projection)
2. Natural Attenuation with Long-Term Monitoring and Institutional Controls	Inactive Ash Landfill • Institutional controls to restrict disturbance of the inactive ash landfill contents • Long-term monitoring to verify no unacceptable releases from the inactive ash landfill Groundwater Contamination • Natural attenuation of vinyl chloride in groundwater • Institutional controls to restrict excavation in the vinyl chloride groundwater contaminated area and restrict installation of drinking water wells • Continued long-term monitoring of groundwater • 5-year site reviews	• Protects human health • Will monitor potential risks to the environment to determine compliance with regulatory requirements • Federal Maximum Contaminant Levels and State Maximum Exposure Guidelines are key **applicable or relevant and appropriate requirements** Cost: $852,000 (20-year projection)
3. Active Remediation and Monitoring	Inactive Ash Landfill • Excavate landfill Groundwater Contamination • Pump and treat impacted groundwater • Institutional controls to restrict excavation in the vinyl chloride groundwater contaminated area and restrict installation of drinking water wells • Continued long-term monitoring of groundwater • 5-year reviews	• Protects human health and the environment • Decreases time for site cleanup • Federal Maximum Contaminant Levels and State Maximum Exposure Guidelines are key applicable or relevant and appropriate requirements Cost: $1,901,040 (20-year projection) (Cost does not include demolition of existing buildings and construction of new buildings)

Alternative 1—No Action

Under the "No Action" alternative, no cleanup actions or institutional controls would be implemented. The "No Action" alternative does not meet the remedial goals for Site 9 because it would take no action to prevent contact with affected groundwater or with contents of the inactive landfill. However, consideration of the "No Action" alternative is required by the National Contingency Plan in order to serve as a baseline comparison for other remedial alternatives.

Alternative 2—Natural Attenuation with Long-Term Monitoring and Institutional Controls

Inactive Ash Landfill

Since the Navy stopped using the inactive ash landfill, the landfill area has been graded and covered with soil, and barracks (Buildings 218-220) used for military residences have been constructed that cover the area. This alternative would establish institutional controls to prevent the disturbance of and contact with impacted soil in the landfill. Land use restrictions shall be documented in the current NAS Brunswick Operations Instructions. The Operations Instructions are used by NAS Brunswick to identify and screen environmental areas from inappropriate construction or development activities.

Should NAS Brunswick ever close and/or transfer this property, EPA and MEDEP shall be notified and appropriate wording shall be included in the necessary real estate documents to prevent disturbance of the landfill without regulatory review and approval. In addition, this alternative would require the development of a Long-Term Monitoring Program to ensure that the landfill is not impacting the environment. Groundwater downgradient of the inactive landfill would be monitored to assess whether the landfill is impacting groundwater and/or has the potential to impact surface water.

Groundwater Contamination

The natural attenuation with long-term monitoring alternative involves reliance on natural flushing and dispersion processes to dilute, and *in situ* biological systems to degrade, chemical contaminants. This alternative would establish institutional controls to prevent human contact with or use of impacted groundwater. Land use restrictions shall be documented in the current NAS Brunswick Operations Instructions. The Operations Instructions are used by NAS Brunswick to identify and screen environmental areas from inappropriate construction or development activities. Should NAS Brunswick ever close and/or transfer this property, EPA and MEDEP shall be notified and appropriate wording shall be included in the necessary real estate documents to prevent use of groundwater without regulatory review and approval. Other aspects of this alternative include continuance of the current Long-Term Monitoring Plan and 5-year reviews by the Navy, EPA, and MEDEP. The land use restrictions address the existing risks by preventing human use and exposure to the affected soil and groundwater.

Restrictions would be applied to the entire Site 9 area east of Orion Street to Avenue "F," extending east to the picnic pond area, and south to Building 52. The Long-Term Monitoring Plan, which is currently being revised, would be maintained to monitor for changes in contaminant concentrations and document the effectiveness of the natural attenuation.

Environmental media will continue to be monitored to assess adverse impacts by Site 9.

Alternative 3—Active Remediation and Monitoring

Under the active remediation and monitoring scenario, a pump and treat remedy would be used to pump impacted groundwater from two extraction wells to a treatment plant. The treatment process would include pre-treatment of the water for metal removal and enhanced chemical oxidation of the organic compounds in groundwater using ultraviolet light. Treated water would be discharged to the sewer. In addition, the inactive ash landfill would be excavated and the area restored. Long-term monitoring and institutional controls, as listed in Alternative 2, would be implemented. The time to achieve cleanup concentrations is estimated to be 3 years.

Nine CERCLA Evaluation Criteria

The Navy used the nine CERCLA criteria described below to evaluate the pros and cons of the remedial alternatives for Site 9. The final remedial action plan must meet the first two criteria (protecting Public health and the environment and complying with applicable or relevant and appropriate requirements of Federal and more stringent State environmental laws and regulations), and must achieve the best balance among the next five criteria. The last two criteria will be evaluated upon completion of the Public comment period as described in the Record of Decision. Table 2 provides a comparative ranking of alternatives to the nine CERCLA criteria.

1. *Overall protection of human health and the environment* addresses whether or not a remedy provides adequate protection and describes how risks are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

2. *Compliance with applicable or relevant and appropriate requirements* addresses whether or not a remedy will meet applicable or relevant and appropriate requirements or other Federal or State environmental statutes and/or provides grounds for invoking a waiver of those statutes and regulations.

3. *Long-term effectiveness* refers to the magnitude of residual risk and the ability of a remedy to maintain reliable protection of human health and the environment over time once cleanup goals have been met.

4. *Reduction in toxicity, mobility, or volume through treatment* refers to the anticipated performance of the treatment technologies that may be employed in a remedy.

5. *Short-term effectiveness* refers to the speed with which the remedy achieves protection, as well as the remedy's potential to create adverse impacts on human health and the environment during the construction and implementation period.

6. *Implementability* is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement the chosen solution.

7. *Cost* includes capital, operations, and maintenance costs shown in present worth (today's dollar value).

8. *State acceptance* indicates, based on its review of the **remedial investigation/feasibility study** and Proposed Plan, whether the State concurs with, opposes, or has no comment on the preferred alternative selected.

9. *Community acceptance* will be assessed following review of the Public comments received on the Proposed Plan.

TABLE 2 COMPARATIVE RANKING OF ALTERNATIVES TO NINE CERCLA CRITERIA

CERCLA Criteria	Alternative 1 – No Action	Alternative 2 – Natural Attenuation with Long-Term Monitoring and Institutional Controls	Alternative 3 – Active Remediation and Monitoring
1. Protection of Human Health and Environment Ranking	Poor	Moderate	Moderate
2. Compliance with Applicable or Relevant and Appropriate Requirements Ranking	Moderate	Good	Good
3. Long-Term Effectiveness Ranking	Poor	Good	Good
4. Reduction in Toxicity, Mobility, and Volume through Treatment Ranking	No Treatment	No Treatment	Good
5. Short-Term Effectiveness Ranking	Moderate	Moderate	Moderate
6. Implementability Ranking	Good	Good	Moderate
7. Cost ($)	0	852,000	1,901,040
8. State Acceptance	To Be Determined	To Be Determined	To Be Determined
9. Community Acceptance Ranking	To Be Determined	To Be Determined	To Be Determined

NOTE: Good = Alternative meets the intent of the criteria.
Moderate = Alternative partially meets the intent of the criteria.
Poor = Alternative does not meet the intent of the criteria.
To Be Determined = These criteria will be evaluated following the Public comment period.

The Navy's Proposed Remedy

The Navy recommends that Alternative 2, Natural Attenuation with Long-Term Monitoring and Institutional Controls, be implemented at Site 9. This alternative will provide basic information that can be used to control future risks should that be necessary. This remedy includes land use restrictions to prevent human exposure to contaminants of concern in the inactive ash landfill and groundwater, and continued long-term monitoring to demonstrate contaminant concentration reduction.

Based on information currently available, the Navy believes the preferred alternative provides the best balance of tradeoffs among the other alternatives with respect to the evaluation criteria. The Navy expects the preferred alternative to satisfy the following statutory requirements in CERCLA Section 121 (b): (1) be protective of human health and the environment, (2) comply with applicable or relevant and appropriate requirements, (3) be cost effective, and (4) utilize permanent solutions.

Glossary

Administrative Record—An official compilation of site-related documents, data, reports, and other information that is considered important to the status of decisions made relative to a Superfund site. The Public has access to this material.

Applicable or Relevant and Appropriate Requirements—The Federal and State requirements that selected remedies must attain. These requirements may vary among sites and remedial alternatives.

Baseline Risk Assessment—A review of hazardous substances present at the site and determination of the risks of health effects that could occur.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)—A Federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act. The Act created a trust fund, known as Superfund, to investigate and clean up abandoned or uncontrolled hazardous substance facilities.

Federal Maximum Contaminant Levels and State Maximum Exposure Guidelines—The relevant and appropriate federal and state standards to be used as groundwater cleanup levels at Site 9.

Groundwater—Water found beneath the earth's surface in pore spaces and fractures in geologic formations. When formations yield water in sufficient quantity and quality, groundwater is often used as a water supply.

National Priorities List—EPA's list of the nation's top priority hazardous substance facilities that may be eligible to receive Federal money for response under CERCLA.

Natural Attenuation—The natural decay of some contaminants, primarily volatile organic compounds, by both physical processes, such as diffusion, dispersion, and degradation, and biologic processes such as biotransformation. Under favorable environmental conditions, natural attenuation will reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil and groundwater.

Polycyclic Aromatic Hydrocarbon—High molecular weight, relatively immobile, and moderately toxic solid organic chemicals. Examples include naphthalene and phenanthrene.

Record of Decision—A legal document that describes the remedy selected for a Superfund facility, why the remedial actions were chosen and others not, how much they cost, and how the Public responded.

Remedial Action—Actual implementation, following design, of the selected remedy to prevent or minimize the release of hazardous substances.

Remedial Investigation/Feasibility Study—A 2-part study of a hazardous substance facility that supports the selection of a remedy for a site. The first part, the remedial investigation, identifies the nature and extent of contamination at the facility. The second part, the feasibility study, identifies and evaluates alternatives for addressing the contamination.

Volatile Organic Compounds—Organic compounds (e.g., vinyl chloride and trichloroethene) that vaporize relatively rapidly from water under atmospheric conditions.

References

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COMMENT SHEET - Proposed Remedial Action Plan for Site 9

You may use this form to send in your written comments on this Proposed Plan. Please send your comments to the address shown below **postmarked no later than 13 August 1999.**

_____

_____

_____

Affix
Postage

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